

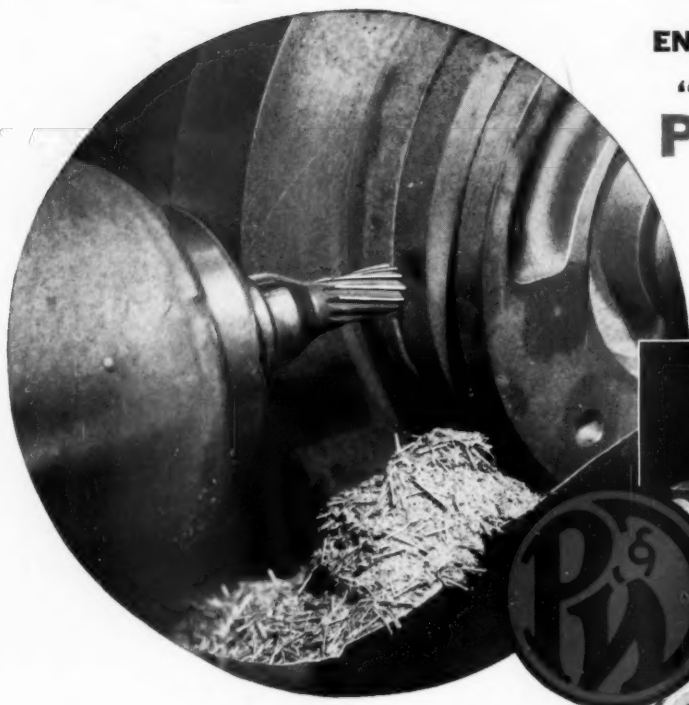
# The Tool Engineer





✓ R v. 5 May 1936 - Apr. 1937

# 286% Increase in Pieces per Grind



END MILL No. 1 . . . . 35 pcs.  
 " " No. 2 . . . . 55 pcs.  
**P&W END MILL . . 135 pcs.**

●  
 These are the pieces grouped with the  
 P&W End Mills ( $\frac{1}{2}''$ - $\frac{5}{8}''$ - $\frac{3}{4}''$ ) which  
 have proved so satisfactory.



**T**HESE parts are sewing machine cams, and the operation is milling the raceways for the motions which operate the various movements of the machine. The work is done by the Landis Machine Co. in St. Louis, Mo.

This job is not easy. The end mill must cut on both sides, and to depths as great as  $\frac{7}{8}''$ . The finish must be almost as good as a ground finish, besides being straight. The raceways must be accurate within .0005".

Pratt & Whitney End Mills have proved their worth on this job. The combination of proper

tool design, the correct steel scientifically heat treated, and precision manufacture thruout means that P&W small tools are the finest we know how to build. And the results speak for themselves in producing a 286% increase in tool life and a better job.

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# USE HAYNES STELLITE J-METAL

*for your Steel Jobs*

- On an automotive production job, solid Haynes Stellite J-Metal tools are used for machining gear blanks of SAE 4615 steel. The picture shows the second operation—rough and finish counterboring—surface speed is 110 feet per minute, feed 0.028 inches per revolution, depth of cut  $\frac{1}{8}$  inch.

Haynes Stellite J-Metal has exceptionally high wear-resistance *especially at the high heat at which the tool operates*. A Haynes Stellite Engineer will be glad to call and show you how you, too, can use Haynes Stellite J-Metal profitably. Write or wire the nearest Haynes Stellite office. There is no obligation.



*A red-hard, wear-resisting alloy of Cobalt, Chromium and Tungsten*

## HAYNES STELLITE COMPANY

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*Haynes Stellite Welding Rods and information on other Haynes Stellite Products also are available through the 42 apparatus shipping points of The Linde Air Products Company*



Let's look  
at the  
**RECORDS!**



(Names Upon Request)

**CUSTOMER "A"** bought a Bore-Matic 3½ years ago. It has been running two shifts every day on the same job of boring aluminum parts. The boring heads have never been off the machine. All told, this concern has 13 Bore-Matics with 39 boring heads.

**CUSTOMER "B,"** a very large automobile manufacturer whose production cannot be stopped, has 11 machines with 53 boring heads. He bought a spare boring head a year ago but has never used it.

**CUSTOMER "C"** has a Bore-Matic on which the boring head has been running 15,000 hours, 24 hours each day continually and never has so much as replaced a bearing.

**CUSTOMER "D"** has a No. 48 Bore-Matic with heads that have run 10,000 hours without a bit of trouble.

*Scores of Heald Boring Head installations have similar records. These self-adjusting long-life heads stand the gaff and produce desired results. The records prove it.*

**HEALD**  
Self-Adjusting  
Long-Life  
BORING HEADS

THE *Heald* MACHINE COMPANY Worcester Mass U S A



# An Achievement in REAMER FLEXIBILITY

## THE NEW "SPLINE-LOCK" ADJUSTABLE INSERTED BLADE REAMER

PATENT APPLIED FOR

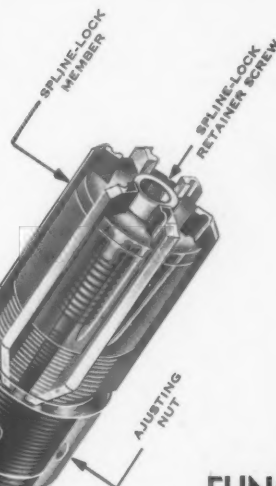
**SIMPLE    EFFICIENT — CONVENIENT**

**Simplicity**, the ground work upon which Spline-Lock Adjustable Inserted Blade Reamers are built, is of noteworthy significance throughout the construction and manipulation of these fine tools. There are ten fewer of the intricate parts which tend to hamper easy, quick adjustments.

**Efficiency** on both roughing and finishing operations has been established. Spline-Lock Reamers are being subjected to the most grueling tests, cutting tough, hard forgings, and have proven capable of surprisingly long runs, and the production of clean cut accurate holes.

**Convenience** of adjustment has won many users to the Spline-Lock Adjustable Reamer.

Spline - Lock Adjustable Reamers can be expanded on the job. The services of experts are unnecessary to effect expansion. Expansion can be completed in a fraction of the time usually required.



### FUNCTION of SPLINE-LOCK and ADJUSTMENT

Sufficient pressure is exerted through the Spline-Lock Retainer Screw when drawn down firmly upon the Spline-Lock Member to depress that member and cause a contraction of the spline pitch diameter. This movement wedges the outer contour of the Spline Member against adjacent blade surfaces and secures the Blades rigidly at the point of load contact.

### ADJUSTMENT

Loosen Spline-Lock Retainer Screw slightly and release Lock Nut. Expand blades by turning Adjusting Nut to right. Tighten Spline-Lock Retainer Screw and Lock Nut and the reamer is read to go to work. Adjustment time should not exceed thirty seconds.

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Reamers of special design to meet your requirements.  
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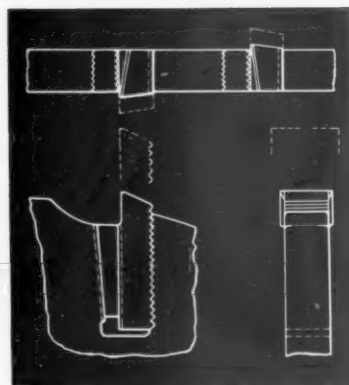


# Ingersoll

## Tri-Lock

### TRIPLE SERRATED BLADE

### NARROW KEYWAY OR



## SLOTING CUTTERS

**WIDTH OR DIAMETER EASILY MAINTAINED  
BY TRIPLE SERRATED BLADE LOCK.  
LOW REPLACEMENT COST FOR NEW BLADES.**

The Ingersoll Tri-Lock Triple Serrated Blade Cutter represents the ultimate in an inserted cutter blade lock. Three sets of serrations are incorporated in the blade and wedge, each set of serrations permitting individual adjustment of a member. The Ingersoll Tri-Lock Cutter Blade has horizontal and vertical serrations on its faces. The horizontal serrations permit adjustment in a diametrical direction, compensating for the major wear of the Tri-Lock Cutter Blade. The vertical serrations permit sidewise adjustment of the Tri-Lock Cutter Blade, enabling the cutter to be accurately held to size. The double set of vertical serrations in the wedge securely lock the cutter blade in all directions.

Using the Tri-Lock Cutter Blade Ingersoll offers the only narrow inserted blade slotting cutter. Cutters as small as  $\frac{3}{16}$ " wide can be made.

● Cutters are made with Ingersoll Tri-Lock Cutter Blades of special selected high speed steel fitted into a forged and heat treated alloy steel body.

*Write for Literature*

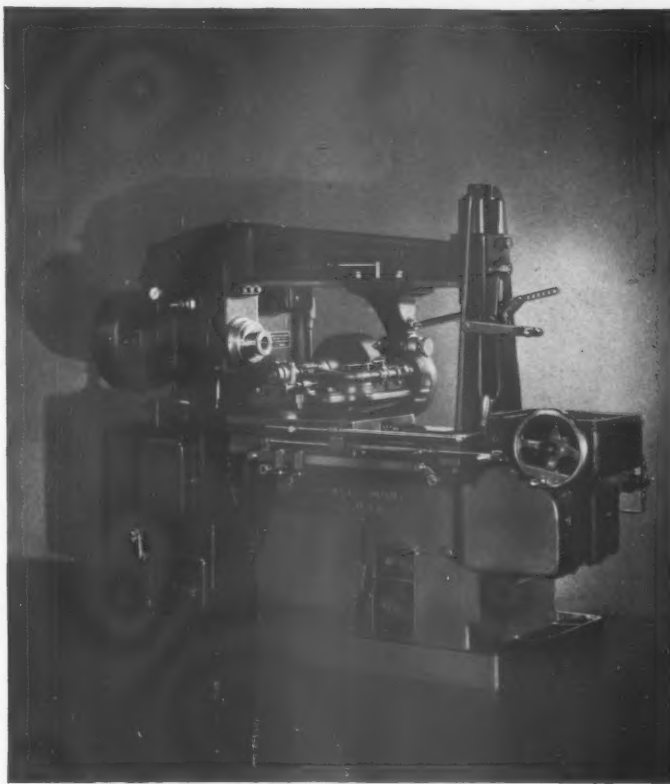
**HAVE INGERSOLL ENGINEER YOUR CUTTING TOOLS... STANDARD OR SPECIAL**



**THE INGERSOLL MILLING MACHINE COMPANY, ROCKFORD, ILLINOIS, U. S. A.**



For  
AUTOMOTIVE  
MANUFACTURING  
Use the  
**Barber-Colman Type A Hobbing Machine**



BARBER-COLMAN COMPANY  
Rockford, Illinois, U. S. A.

*Represented*  
*in the Detroit Territory by*  
HODGES MACHINERY CO.  
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**Accurate.** High accuracy is built into every part of this machine, and means are provided wherever necessary for maintaining this accuracy in heavy duty service. See Bulletin F-1099-1 for details.

**Beating** former high production and economy records is a common occurrence when Barber-Colman Type A Hobbing Machines are installed. For example: production on hobbing a certain crankshaft gear was 11.7 pieces per hour, 4 work-pieces per load; single-thread, one position hob. On the same work, a Barber-Colman Type A Hobbing Machine produced 27.5 pieces per hour with 8 work-pieces per load using a double-thread hob on which three settings are available. Here is a production *increase* of 135%, and longer hob-life at lower cost.

**Complete.** For any usual requirement within its capacity, the Type A Hobbing Machine is complete including such units as Stabilizer, Rapid Unloader, Motor Drive Arrangement, etc., listed as extras on other types of machines. For certain unusual types of work, Special Units such as 90° hob spindle, vertical feed, extra long bed, etc., are available. These are shown in Bulletin F-1409.

*In automotive manufacturing, and many other classes of work, installation of Barber-Colman Type A Hobbing Machines goes a long way towards making the solution of hobbing problems simple as A, B, C. Investigate. Write, today, for the bulletins mentioned above.*





## INSPECTION SPELLS PERFECTION

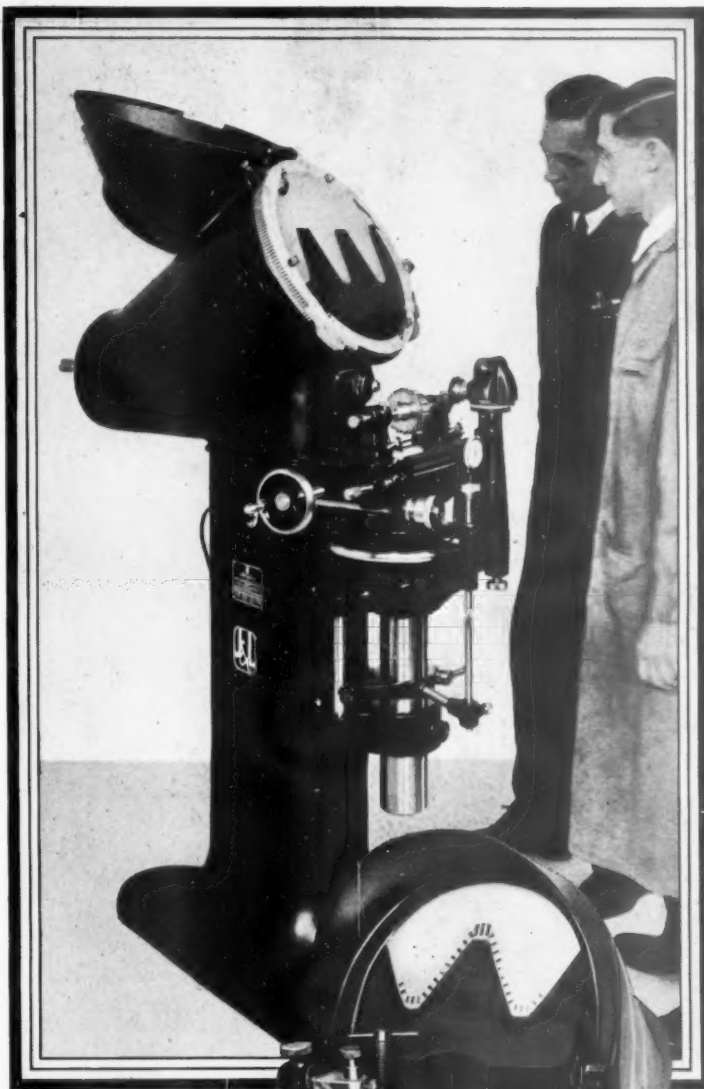
WHEN PARTS ARE CHECKED  
ON A J&L COMPARATOR



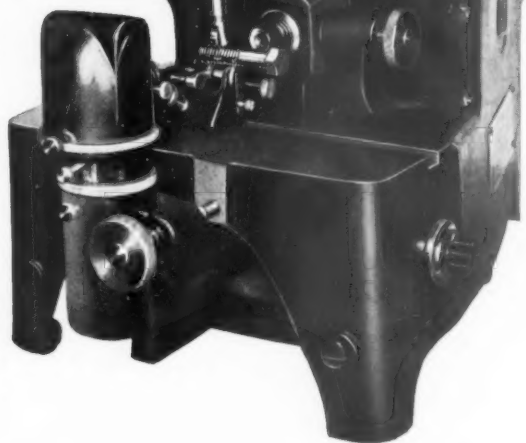
The J&L Comparator meets the requirements of tool room production and laboratory inspection.

It may be used to compare an object against a master outline, or to make direct measurements of height or depth, lead or spacing, and angles within 2 minutes.

The J&L Comparator is *the* machine on which to check each operation, on every part, so that the final product will bear an assured O.K.—let inspection spell perfection.



PEDESTAL  
COMPARATOR



BENCH TYPE  
COMPARATOR

**JONES & LAMSON MACHINE CO., SPRINGFIELD, VERMONT, U. S. A.**



# The Tool Engineer

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Official Publication of the AMERICAN SOCIETY OF TOOL ENGINEERS

Vol. V.

MAY, 1936

No. 1

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*The Tool Engineer* is published on the first Thursday of each month. It is the official publication of the American Society of Tool Engineers, Incorporated. The membership of the Society and readers of this publication are practical manufacturing executives such as master mechanics, works managers, tool engineers, tool designers and others who are responsible for production in mass manufacturing plants throughout the nation and in some foreign countries.

Owing to the nature of the American Society of Tool Engineers organization, it cannot, nor can the publishers be responsible for statements appearing in this publication either as papers presented at its meetings or the discussion of such papers printed herein.

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### HAVE WE YOUR CORRECT ADDRESS ?

Readers of *The Tool Engineer* are urged to return the blank below properly filled out so that each issue will reach them promptly.

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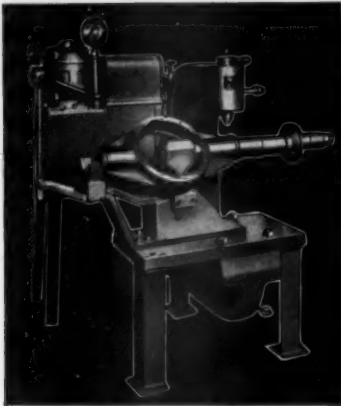
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"Hy-Power" single stationary riveter for heading  $\frac{3}{8}$ -inch cold rivets. Larger and smaller units available with any type fixture.



"Hy-Power" duplex stationary riveter for heading two  $\frac{3}{8}$ -inch cold rivets simultaneously.



"Hy-Power" hydraulic pressure generator, with completely automatic valve and oil pump control, actuated by push button on the riveter. Motor 2 h.p. Requires less than 4 sq. ft. of floor space. "Hy-Power" portable yoke riveter, weight 54 lbs., 6-inch reach, 35,000 lbs. pressure, for heading  $\frac{3}{8}$ -inch cold rivets. Larger and smaller portable riveters are available.

## "HIGH PRODUCTION" has a NEW meaning

### OVER EIGHTEEN HUNDRED RIVETS PER HOUR

is the steady production rate of the new Hannifin Duplex Hydraulic Riveter, simultaneously heading two  $\frac{3}{8}$ -inch cold rivets in an axle assembly operation. Equal pressure is applied to head both rivets, regardless of rivet length. This unprecedented production is easily maintained, for the operator's job has been reduced to its simplest terms and the riveter cycle is completed automatically and is literally "lightning fast."

Other models of Hannifin Hydraulic Riveters, available in both portable and stationary types and for heading both larger and smaller rivets, maintain proportionate production rates. The portable yoke

type riveter for  $\frac{3}{8}$ -inch cold rivets has an operating cycle of  $2\frac{1}{2}$  seconds.

This simpler and faster handling means a direct and important cost reduction, available for practically every type of production riveting operation.

Hannifin Hydraulic Riveters are complete self-contained units, comprising either portable or stationary riveter heads, automatic hydraulic pressure generator, and push button control. Standard or special work holding fixtures can be provided to suit any needs. Recommendations and performance data on equipment to suit your riveting operations will be provided by Hannifin engineers on request.

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### HYDRAULIC RIVETERS

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# MAY CHAPTER MEETINGS

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## CLEVELAND

**MAY 14th, 1936**

**DINNER: 6:00 P. M.**

**\$1.00 per plate**

**Technical Session 7:30 P. M.**

**at**

**NELA PARK, GENERAL ELECTRIC COMPANY, NOBLE ROAD**

**Meet at 5:30 P.M. in the General Electric Institute Building, where arrangements will be made for dinner.**

**Speaker: MR. ARTHUR A. MERRY, District Manager,  
Carboloy Company Inc.**

This will be a Stereopticon Lecture with a display of Carboloy Cutting Tools and Grinders, showing how to grind Carboloy Tools, also giving a general idea and history of the making of Carboloy.

Mr. Merry is an authority on Carboloy Tools, on their application, uses and grinding, having had ten years experience with the Carboloy Company.

Make reservations immediately with Mr. G. J. Hawkey, Secretary. Cleveland Duplex Machine Company, Penton Building. Telephone Main 0112. All Production Executives, Superintendents, Foremen and guests of Tool Engineers are cordially invited.

---

## DETROIT

**MAY 14th, 1936**

**Dinner: 6:30 P. M.**

**Technical Session: 8:00 P. M.**

**at**

**HOTEL FORT SHELBY**

**Speaker: R. E. W. HARRISON, Vice President, Chambersburg  
Engineering Company**

**Subject: "Developments in Modern Drop Forging and Their Relation  
to Current Machine Shop Practice"**

Detroit Chapter is particularly fortunate in having Mr. Harrison, widely known as one of the ablest technical speakers in the country, as the principal speaker for the evening. He will speak on a subject of vital interest to all process engineers.

Mr. Harrison was formerly Chief Engineer of Cincinnati Grinders, Inc., and when elected to the Vice Presidency of the Chambersburg Engineering Co., was Chief of the Machinery and Agricultural Implement Division of the Bureau of Foreign and Domestic Commerce in Washington.

He received his early engineering training in England, where he was employed for a number of years by the Churchill Machine Tool Co., Ltd., where he served in the various capacities of Assistant Works Manager, Head of the Work Progress Dept.; also, was in charge of Tool Engineering. He is a member of many leading technical societies both here and abroad; hence, is admirably qualified to address the American Society of Tool Engineers on a technical subject of such specific interest and appeal.



## PRODUCTION PERSPECTIVES

**M**ASS manufacturing plants in most sections of the country continue at a fairly high level of production. The first half of April set back most plants of the New England area, but it is nothing short of miraculous the way they have "dug themselves out" of the debris and wreckage wrought by the floods.

The past several weeks in the Detroit area have seen the most marked shortage of tool and die designers in several years. If there are any A.S.T.E. members who are tool and die designers not at present employed, they are urged to get in touch with the Secretary's office in Detroit as there are a great many more vacancies than there are qualified men to fill them.

The Newark, New Jersey industrial area has experienced a sharp increase in the demand for experienced tool and die makers, which is thought by some to be the forerunner of a major industrial boom for that area. The situation in that section is reported to be typical of that in other industrial centers, as the demand, generally, for this class of worker is greater than the supply. A skilled machinist or tool maker in almost any industrial area of the country need not be out of a job at present. There is also an increasing demand for Engineering College graduates. The President of a large eastern Engineering College declares the demand for Engineering graduates has increased greatly during the past several months. Requests, he states are coming from industries and the desire is expressed for unemployed engineering graduates.

Production will continue—perhaps on a higher level—judging from indications. About the middle of next month two billion dollars in bonus certificates will be distributed and surveys already indicate that most of this money will be spent by veterans for merchandise and needed commodities of all kinds. Mass manufacturing industries will receive a considerable impetus from these expenditures—automobiles, household appliances, radios, etc. Machine tool builders, no doubt, will feel this also, and in addition will find sizable sales for equipment replacing that which was damaged beyond repair by the floods.

How New England plants resumed "back to normal" operations so quickly is typified at the Wiley & Russell plant in Greenfield, Massachusetts. At this plant a force of two hundred workmen was put to work for three days which cleaned up the mess and allowed the entire plant to resume operations again. Wico Electric plant is another that is now going full tilt again—with two eleven hour shifts working. One humorous incident of the otherwise hectic conditions of the floods occurred at the plant of the Hampden Grinding Wheel Company in Springfield, Massachusetts when the sprinkler system was on for more than four days during

the flood (with eighteen feet of water in the plant at the time) and company employees unable to turn it off.

Most New England manufacturers are well supplied with orders and will operate more briskly from now on as a result of the delays caused by the floods and the resultant accumulation of business. At the East Springfield works of the Westinghouse Electric and Manufacturing Company production is being maintained at the same high level it has pursued since last November, and the early addition of air conditioning production it is thought will offset any seasonal drop in other departments. At Chicopee Falls this company is preparing to expand on the strength of a large radio order which it is estimated will require one year to fill. United American Bosch Corporation of Springfield is assured of an extremely busy spring, with production of automobile ignition parts on the rise and a greater demand for Diesel engine equipment. Bausch Machine Tool Company also of Springfield is said to have large orders for multiple drills and fittings and has recently enlarged its force of designers. Van Norman of the same city is another tool company which continues to operate at a high level. Automotive manufacturers have placed large orders which sustains this high level and which promises to continue for several months.

A new machine has been developed in Pawtucket, R. I., by the Sellew Machine Tool Company, which drills 42 holes simultaneously in the latest type gas range burners. Up to this time 21 holes drilled at once have been the maximum. The new machine is made up of multiple small gears each propelled by a larger bull gear. The machine is powered by three separate electric motors.

D. G. Clark, purchasing agent at Brown & Sharpe in Providence has been made controller. He is succeeded by Raymond W. Dickson who becomes purchasing agent after a number of years association with the firm. The Kingsbury Machine Tool Company at Keene, N. H. is back in production with about 100 men working and regular production schedules are being maintained. The M. D. Perkins Machine Company of the same town has recently taken over the Bellows Falls Machine Company of Bellows Falls, Vermont. Ernest L. Sloan will be manager of the newly acquired plant. The company will install new machinery in addition to that already in operation at the old plant in Bellows Falls.

Fred E. Gitzendanner, owner of the Greenwich Machine & Tool Company of New York City, died at his home in East Orange, N. J. on April 8. The Hudson River Valley Division of the Special Tool, Die & Machine Shop Institute recently elected as officers, Sidney Diamant, Diamant Tool & Manufacturing Company of Newark, N. J., President. Fred C. Danneman of the F. C. Danneman Company, New York City, Vice President and B. B. Beck, of the Mechanical Tool & Die Company, Brooklyn, as Secretary.



# National and Detroit Chapter Officers Introduced at April Meeting

*CHARLES M. NEWCOMB, Guest Speaker, Provides Spice to Make a Most Unusual Program*

THE Conquest of Fear—that has been one of man's major problems throughout his existence. Volumes have been written on this subject, and philosophers have pondered it, but it remained for Charles Milton Newcomb to dissipate the fears of Detroit Tool Engineers, gathered at the April meeting. Few speakers have so held the interest of an audience as this master of the spoken language, who ran the gamut from the ridiculous to the sublime. We refrain from printing his speech here, since the printed word would be devoid of the speaker's arresting personality, and because he treated a topic somewhat foreign to Tool Engineering. Nevertheless, we recommend Mr. Newcomb to any gathering that wishes to laugh and wax fat, yet, would walk the straighter for having heard him. We are grateful to Motch & Merryweather Machinery Company, who sponsored this speaker, for the happy thought that sent him Detroitward on April 9th.

Editors note: We print below the gist of President Lamb's speech, which is pertinent to Tool Engineers and their Society, with apologies for deletions and the minor changes necessary to avoid abrupt transitions.

Mr. Lamb:

"Mr. Chairman, fellow Tool Engineers and Guests: I am happy to have been elected President of the American Society of Tool Engineers, and hope that I will be able to conduct the duties of this office in a manner creditable to the organization. I had the privilege of being present when the Society was organized, have watched it grow and have observed the progress made, which has been extremely gratifying. Organized in 1932 as a non-profit corporation, with no stock, each member owns an equal share with every other member. Control of the Society starts with the members, but is vested in the Directors who are elected by the members. The Directors elect the Officers and authorize their every action.

"In 1932 a group of Tool Engineers felt the need of some medium whereby the science of tool engineering could be advanced and they organized this society for that purpose. With your permission I will now read Section Cl-3 of the Constitution.

In order to advance, promulgate, and further the Arts and Science of Tool Engineering among the members of the Society; to bring about good fellowship fraternity and the spirit of brotherhood among members; to hold readings and discussions on professional papers and reports at meetings called for that purpose; to publish and disseminate such papers and reports to the members;—this Society is created.

"Now, promulgate means to make known or announce to the public—in other words, to advertise. Like the new papa who, absent, was advised of the great event by telegram. 'Hazel presented you with a fine baby girl this morning both doing well' it read. Then, on a sticker. 'When you want a boy

call Western Union.' That is known as subtle advertising.

"One of the major purposes of this organization is to advertise the profession of Tool Engineering. That we have done and will continue to do as the Society grows and expands through the medium of our meetings. Through the medium of our group activities, such as *The Tool Engineer*, the Standard Data Sheets, sponsoring meetings of the Machine Tool Forum and the like. Every bit of advertising the Society can give to the profession of Tool Engineering will be a direct benefit to every member.

"I called this work of ours a profession. I did that advisedly. A profession is an occupation which requires a liberal education or the equivalent, and mental rather than physical labor. That describes it, doesn't it? All of us have traveled a certain road in Tool Engineering. A lawyer, even the time that he spends when he connects himself with some law firm to read law, is serving his apprenticeship. The doctor, when he spends a certain number of years serving as an interne in a hospital, is serving his apprenticeship. And we Tool Engineers, when we serve our time working on the board are serving our apprenticeship. Now, I'll bet you would say there isn't a man in the room, or not a Tool Engineer in the room, who when he first started in Tool Engineering didn't have in his mind the thought of advancement and progress just as far as he could go. Some of us got into this game of Tool Engineering by choice. Some of us got into it by blundering, and some of us were forced into it. We all follow approximately the same path, or are following the path, of designer, checker, layout, process, specifications, right on up to Master Mechanic or beyond. Some of us branch off into Sales Engineering, and some of us into businesses of our own, and some of us don't advance very far along the road. I can see where a man, or men, who, having served an exceptionally long time on one step of the ladder and who has become satisfied at that place, can consider his work and call it a trade. But no man who has advanced very far along the road of Tool Engineering will consider his work as anything else but a profession.

"Another object of the Society is to advertise the profession of Tool Engineering. By its nature the Society cannot concern itself with individual problems of any member. We can only concern ourselves with the problems pertaining to Tool Engineering. Tool Engineers are timid, someone said. I remember about three years ago Bob Lippard was driving a new car and someone asked him how come, and he said, 'I went into a sales room to use the telephone and I thought I ought to buy something before I came out.' Activity in this Society will eliminate that timid tendency among Tool Engineers, I can assure you. The ability to come down here and meet with other men in your profession, discuss your problems with other men in your profession, is of more or less value to every one of us.

*(Continued on page 22.)*



# Putting a YARDSTICK On YOURSELF

By JOHN YOUNGER

*Professor of Industrial Engineering  
The Ohio State University*

WE are all of us surprised when the farmer looks at a hog or cow and guesses its weight within a pound or two, but by the aid of a weighing machine we can find its weight more accurately. We may envy the man who looks at a house and says deliberately, "That is a \$5000 house." But we can hire an appraiser who will measure the house and size up its nature—its walls, its floors, its furnace and what not and say with greater accuracy, "That is a \$5850 house." Few of us can estimate accurately next year's production of automobiles, but each one of us can say definitely and specifically whether or not he will be in the market for a car in a stated month of 1936.

And so it is with man. It is difficult to size up a man completely, but if we split his characteristics down to their small portions, we can determine the value of each portion more or less scientifically and very accurately. Further, if we apply this knowledge gained to an estimate of his worth, we can judge men then very accurately indeed. We are all intensely interested in the salaries we get or ought to get. Money plays a vital part in our life, and we all want to see that we get our fair and just share. So let us find out where we stand. Incidentally, this business makes a most fascinating game which can be played to great advantage in determining one's status in life.

The first factor to be taken is that of *Physical Requirements*. In some offices heavy books have to be lifted occasionally—5 points are allowed for this. Where some 30 or so of these books are lifted each day—15 points are given. Where the controls of a machine have to be handled and a man of strong physique is required to stand up to the job, then an allowance of some—25 points is made. Similarly if loads of some 50 pound weight have to be handled at times an allowance of 25 points is made. Where loads are very great and considerable strength is required, then some 50 points are given.

## Pace

Tool work and fixture work often demand immediate attention and there is great rush to get the work done. Where this rush is continuous from day to day with no let up 15 points are allowed. Where merely a daily quota of work has to be met and the quota reasonable, 10 points are allowed. Where rush is only occasional, 5 points are allowed.

## Skill

This factor is usually evaluated by considering the learning period involved. When the backbone of learning the job can be accomplished in one month or less, then 26 points are given. For a two-month period, then a point value of 52 points are given. For three months, 75 points. For 6 months, 150 points, and so on. This period of learning does not include the educational time, merely the time of learning on the job.

## Responsibility

An error in one job may lead to serious consequences in danger to life or loss of money. Responsibility is determined by this.

Where responsibility is very light—0 points are given.

Where responsibility is fair—5 points are given.

Where responsibility is fair to great—15 points are given.

Where responsibility is great—25 points are given.

And if responsibility is very great more points are given.

## Accuracy of Calculations

Where calculations are of an elementary nature—5 points.

Where calculations are more advanced—15 points.

Where calculations are very advanced—25 points.

Where calculations are highly mathematical—50 points.

## Accuracy of Recording

Where simple accuracy of recording is necessary—5 points.

Where fair accuracy of recording is necessary—15 points.

Where great accuracy of recording is necessary—25 points.

And so on.

## Education

Where a high school education is all that is necessary—5 points.

Where a high school education plus correspondence school—20 points.

Where a university education is required—35 points.

Where extensive experience is required—35 points.

Where university education plus extensive experience is required—50 points.

## Judgment

Where ordinary judgment is required—5 points.

Where great judgment is required—25 points.

Where extraordinary judgment is required—50 points.

## Management Ability

Where 5 persons are supervised—10 points.

Where 10 persons are supervised—20 points.

Where 20 persons are supervised—35 points.

Where 30 persons are supervised—50 points.

And so on.

## Contact with Public or Industry

Where simple contacts are necessary—5 points.

Where engineers have to be met—25 points.

Where shopmen have to be interviewed—25 points.

Where there is great contact with labor affairs—50 points.

Now to evaluate, and here I am somewhat tentative, offering this as a target for your arrows of criticism. I may be low, I may be high, I don't exactly know, though I think I am nearly right. My two spots on the curve of salaries that you may chart are—

75 points \$ 50 a month

350 points \$300 a month

or approximately the formula—

$$y = 10/11 x - 20$$

where y = salaries

and x = points

Try this on yourself and let us know the results.





## THE SHEFFIELD VISUAL *Cannot* LOSE ACCURACY DUE TO WEAR

The use of the Reed mechanism, available exclusively in Sheffield Visual Gages, eliminates any need for gears, levers, knife edges or sliding friction. In functioning, the only movement is a slight deflection of the special spring steel Reeds—no rubbing, rolling, pivoting or rotation.

Consequently as there is no friction there can be no wear, and without wear, there can be no loss of accuracy. In short, the Reed mechanism which is the heart of every Sheffield Visual Gage, constitutes the ideal means of gage amplification. Without any of the disadvantages of mechanical amplification, it retains the extreme sensitivity characteristic of mechanical amplification.

The Sheffield is rapid as well as sensitive; records show as many as 3600 parts per hour checked to half a "tenth", or closer where desired.

If you want consistent gage performance and a high order of precision, standardize on Sheffield Visuals—the gages that do not wear out or become obsolete. Write for full particulars.

MASTER  
  
GAGEMAKERS

*The* **SHEFFIELD GAGE CORPORATION**  
DAYTON • OHIO • U.S.A.



No. 1 Visual  
Magnification 5,000

Electric  
Gage

No. 3 Visual  
Magnification 1,000



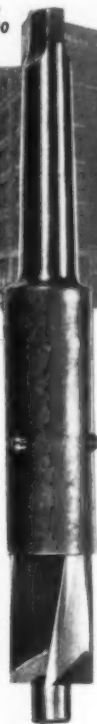
# P R O G

## 1913

The birth-place of Eclipse—1913.



The first Eclipse Shop—1916, 3,000 square feet.



*This shows the very first Eclipse Interchangeable Counterbore produced in 1913. Although crude, the practical design embodied in the cutter and holder was soon recognized and universally adopted.*

## Achievement!

**HISTORY**—Counterboring, spotfacing and other similar operations were revolutionized when Eclipse introduced its line of interchangeable tools in 1914. The founders of Eclipse, conceiving the idea of reducing end cutting tool costs, produced commercially the first quick-detachable counterbores.

Initial business activities of the Eclipse Company were conducted in the attic of the founder's home. Today, Eclipse interchangeable tools of various types are used in the manufacture of almost every automobile, tractor, airplane and diesel engine, as well as refrigeration, laundry, agriculture and road building machinery. In addition, many manufacturers of machine tools, printing presses, oil well and railroad equipment, etc., are specifying "Eclipse."

**HIGH QUALITY**—The quality of Eclipse products is frequently referred to as a standard by which most all interchangeable type tools are measured.

**DEPENDABILITY**—The first purchase orders from many present customers date back to twenty-two years ago. This is mute evidence of the dependability of Eclipse tools and of the organization producing them.

**LOW PERFORMANCE COST**—Based on operation costs, Eclipse tools have usually proved to be the most economical tools of their kind obtainable.

**SERVICE**—Eclipse undoubtedly carries the largest and most complete stock of standard interchangeable holders, cutters and pilots, available. This assures Eclipse customers of immediate deliveries.

A complete engineering staff is maintained for Eclipse users. Our long experience specializing exclusively in the design and manufacture of interchangeable end cutting tools enables us to recommend economical production tool-ups. Send us your blue prints and specifications and we will furnish layouts and suggestions without obligation.



Eclipse—1917, 10,000 square feet.



*This shows the Eclipse Interchangeable Counterbore as of 1917. In the background is the first company-owned building, containing 10,000 square feet of floor space.*

### ECLIPSE SALES REPRESENTATIVES IN

|             |            |               |              |
|-------------|------------|---------------|--------------|
| New York    | Rochester  | Cleveland     | Chicago      |
| St. Louis   | Cincinnati | Boston        | Los Angeles  |
| Pittsburgh  | Baltimore  | Buffalo       | Tulsa        |
| Minneapolis | Flint      | Milwaukee     | Philadelphia |
| Toronto     |            | San Francisco |              |

# ECLIPSE COUNTERBORES

## DETROIT



# ECLIPSE

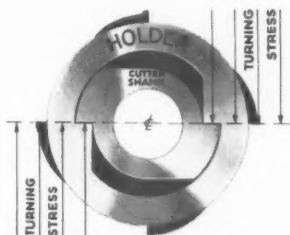
1936



square feet.



Our present complete modern cutter manufacturing plant—1936, 25,000 square feet.



Enlarged section of the holder and cutter shank.



Eclipse Interchangeable Counter-  
in the background can be seen  
owned plant which was built the  
contains 25,000 square feet of

In 1934, Eclipse engineers introduced the Radial Drive Counterbore, meeting the present mass production requirements of industry for stronger tools. Adapting an age-old principle to modern cutter construction (driving on line of center) has resulted in a sturdier interchangeable drive than heretofore available.

In the background, can also be seen the plant as it appears today. The two-story building at the left was added in 1928-29, giving a total floor space of 25,000 square feet. The plant is the most modern and best equipped of its kind and includes an up-to-date hardening and heat-treating department.

COUNTERBORE

## COMPANY

DETROIT

### TODAY ECLIPSE TOOLS INCLUDE:

Interchangeable counterbores, countersinks, spoofers, multi-diameter cutters, back spotfacing cutters, two-piece core drills, etc.

### ALSO:

Die Sinking cutters, H. S. S. insert centers, adjustable holders, tungsten carbide tools, special tools.



**FIDO TRYING  
TO SCRATCH  
THE FLEAS  
OFF HIS BACK**



... has just about as hard a job as  
the manufacturer trying to cut die set  
costs without using **DANLY DIE SETS**

## **DANLY DIE SETS SAVE YOU MONEY IN THREE WAYS**

### **① DANLY CATALOGING**



● From Danly's unlimited number of possible combinations of die set size, thickness and material of shoe and punch holder, bushings and length of pin—you select the die set ideally suited to the job in hand—*faster*—because the new Danly Catalog is easier to use and more complete than any other listing of its type.

Write the Danly Branch Plant nearest you for your copy of this great new catalog and full details on its most profitable use.

### **② DANLY QUALITY**



● Danly Die Sets are more accurate—give more accurate parts—and give greater production per die before regrounding.

A typical example of Danly's longer-lived accuracy is furnished by this die for producing typewriter ribbon spool flange bottoms. Due to the speed at which these parts must be assembled, a high degree of accuracy must be maintained. Two holes and four slots are first pierced. The part is next stamped with the manufacturer's trade-mark. In the next station it is again pierced and two ears are formed at the same stroke. At the next station the part is blanked—rate 95 pieces per minute—a record due, in part, to the use of Danly Die Sets.

### **③ DANLY DISTRIBUTION**



● *Faster delivery of better die sets at lower final costs* is offered the manufacturers in each of these 7 districts by the unique Danly Distribution Plan. Danly maintains a complete stock—and an assembly plant—at each of these strategically located points. Each one is equipped to meet any die set requirement—**TO SHIP WITHIN 24 HOURS**—an unlimited number of possible combinations of Danly Standard Die Sets.

**DANLY MACHINE SPECIALTIES, Inc., 2114 South 52nd Ave., Chicago, Illinois**

Long Island City, N. Y., 36-12 34th Street  
Dayton, Ohio, 114-116 N. St. Clair Street

Detroit, Mich., 1549 Temple Avenue  
Rochester, N. Y., 16 Commercial St.

Cleveland, Ohio, 1444 E. 49th Street  
Philadelphia, Pa., 3913 N. Broad St.

# **DANLY**

# **DIE MAKERS' CLIPPIERS**



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# A. S. T. E. Chapter News

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## *All Cleveland Chapter Officers, Re-elected*



R. A. FINTZ  
Cleveland Chapter Chairman



FRANK JEFFS  
Cleveland Chapter Treasurer



G. J. HAWKEY  
Cleveland Chapter Secretary

### CLEVELAND

The regular meeting of the Cleveland Chapter of the American Society of Tool Engineers was held April 9. New Chapter Officers were installed as follows: Mr. R. Fintz, Chapter Chairman; Mr. G. J. Hawkey, Chapter Secretary, and Mr. F. Jeffs, Chapter Treasurer.

Mr. Millard Romaine, Director of Engineering Service for the Cincinnati Milling Machine Company, gave a most interesting talk on various ways of milling a simple part. He showed stereopticon slides illustrating different types of set-ups for doing the same operation with the comparative time studies and cost of machining and tooling in order to determine which type of setup would be most economical from the standpoint of production requirements and investment in equipment.

### DETROIT

The Detroit Chapter regular meeting was held April 9. Present at this meeting were all newly elected National Officers, as well as new Chapter Officers and various committee chairmen. Mr. Otto Winters, Detroit Chapter Chairman, announced the appointment of Mr. Homer C. Bayliss as Meetings Chairman; Mr. U. S. James as Chairman of the Detroit Chapter Publicity Committee; Mr. W. B. McClellan, Chairman of the Entertainment Committee; Mr. Royal Holt, Chairman of the Membership Committee, and Mr. William J. Fors, Chairman of a new committee—a Reception Committee whose duty it will be to make members and guests acquainted at the meetings and social gatherings of the Chapter.

Maurice J. Tessier, who is Tool Designer with the Chrysler Corporation, Detroit, left the second

week in April to be married in New Hampshire. He is expected to return to Detroit the first week in May.

### MILWAUKEE

The first regular meeting of the Milwaukee Chapter was held April 16, at the Eagle's Club. A chicken dinner was served. The speaker of the evening was Mr. Arnda Pfau, Consulting Engineer on Hydraulics, who gave an interesting talk illustrated with pictures on new processes and equipment used at the Boulder Dam. Following Mr. Pfau's talk, Mr. George A. Smart, Tool Engineer of Allis Chalmers Manufacturing Company, discussed some of the special methods and tooling necessary for building, assembling, and erecting Boulder Dam machinery.

### RACINE

The last meeting of the Racine Chapter was very successful, and has been highly praised by the local membership, as well as out-of-town visitors. The Chapter is grateful to the speaker of the occasion, Mr. Fleming of the Socony Vacuum and Wadham Oil Company, who gave a very interesting talk on cutting oils and industrial lubricants. Many charts were presented and a most interesting question and answer session followed Mr. Fleming's talk.

May 22, has been tentatively set as the date for the next meeting of the Racine Chapter. On this day it is planned to hold a golf tournament for Racine Chapter members and their friends, to be followed by a banquet and a technical meeting in the evening. Mr. Lamb, National President of the Society, will be present at this meeting.

H. U. Gordon has been made Membership Committee Chairman and T. J. Santry Publicity Committee Chairman, while B. J. Kinner has been made Industrial Relations Committee Chairman.



# NEW NATIONAL OFFICERS PLEDGE ANOTHER YEAR OF PROGRESS

From the enthusiasm and downright sincerity of purpose and interest manifested by the newly elected National Officers of the American Society of Tool Engineers, the organization is scheduled for another year of progress. Inducted into their various offices at the Detroit Chapter meeting, April 9th, all expressed a genuine willingness to serve and to continue the wonderful progress the Society has made during the past year. Elsewhere in this issue of *The Tool Engineer* will be found excerpts from the addresses given by these men, while below we introduce them to all members of the American Society of Tool Engineers and to readers of this publication.



FORD R. LAMB  
President

**FORD R. LAMB**, President of the American Society of Tool Engineers for the coming year, has served the Society in so many ways and so faithfully since its inception that an introduction is superfluous. Mr. Lamb is a prominent Tool Engineer, better known, perhaps, in the automotive industry than in other fields. With the Studebaker Corporation, he was in charge of mathematical instruction of apprentices; also, acted as assistant to the Production Engineer. He is an inventor, a specialist on threading and stud setting methods, and, widely experienced in production, tool making and design, as well as production engineering, has a background which gives him a broad understanding of the problems confronting the membership of the Society.

At this time he is Sales Engineer for the Consolidated Machine Tool Corporation, at the Detroit division. Mr. Lamb is an able executive who will demand unstinted cooperation from subordinate officers and committee heads, however, as this will revert to the Society's benefit, we look forward to a year of expansion and progress. Of a quiet but compelling personality, the new President is admirably fitted for the office to which he has been elected, hence, the activities of the Society will be carried on under an able and energetic leader.



FRANK A. SHULER  
Vice President

**FRANK A. SHULER**, First Vice President, was born at Canton, Ohio, where he received his early education and training. In 1907 he became associated with the Timken Axle Company and was later transferred to the Detroit branch of that company where he served in the capacity of Master Mechanic for about ten years. At present Mr. Shuler is Master Mechanic of the Highland Park plant of the Chrysler Corporation and we have it on good authority that, while in the services of this company, Mr. Shuler has developed a method of rear axle housing fabrication which already has made a saving of several hundred thousand dollars per year over previous methods used.

Mr. Shuler is known as a hard working Tool Engineer who doesn't play golf, nor go out (very often) and has a good sized family. If short on words, we may consider our first Vice President to be a man of action—and results.



**LUKE E. BEACH**, Second Vice President, was born in Birmingham, Michigan, where he received his early education. Then, during a four years apprenticeship course at the Burroughs Adding Machine Company, in Detroit, he studied mathematics and designing. With a few more years of toolmaking to his credit, he bent over a drawing board for six years or so, during which time he studied factory management and time study. By this time he was ready to go places, so we find him as Assistant Chief Tool Designer at Cadillac Motors. Leaving there, he became in turn Chief Tool Designer and Superintendent of the Lincoln Motor Company.

Returning to Cadillac as Tool Engineer, he was promoted to Assistant Superintendent of Tools and Equipment. For the past two years he has been Chief Tool Engineer at Packard Motor Car Company, Main division. Mr. Beach is a highly qualified man to be included among the Officers of the American Society of Tool Engineers.



LUKE E. BEACH  
*Second Vice President*

■   ■   ■   ■

**FRANK R. CRONE**, the new National Treasurer, is a charter member of the American Society of Tool Engineers and has been an active and interested member of the organization since its beginning, having served on the Board of Directors and participated in various committee activities. He is Chief Tool Designer of the Lincoln Motor Car Company, having come up from the ranks to his present position.

Mr. Crone was born in 1894 in Detroit, and after receiving his early education in this city, began his career with the Cadillac Motor Car Company in the Tool Stock Department. Later he became connected with a number of motor car manufacturers, including the Maxwell Motor Company, where he was employed as a tool designer.

During the war Mr. Crone served in the army, overseas. He has every confidence in the future possibilities of the A.S.T.E. and feels that all who have a genuine interest in this occupation should affiliate themselves with a progressive group such as the American Society of Tool Engineers.



FRANK R. CRONE  
*Treasurer*

■   ■   ■   ■

**C. RAY BRUNNER** newly elected Secretary, was born in Georgetown, Ohio, but his family removed to Muncie, Indiana, where he received his early education. He then served an itinerant apprenticeship in machine shops of various Indiana cities, taking night courses in mathematics and mechanical drawing in the meantime. Later he came to Flint, Michigan, as Assistant Tool Room Foreman at the Chevrolet Motor Company. During the war he was transferred to tool designing.

Coming to Detroit, he engaged in tool designing at the Cadillac Motor Car Company and in a similar capacity at Northway Motors, where he also served as Assistant Chief Tool Designer. Then, with Dodge Ordinance as Production foreman. For the last fourteen years he has been with Dodge, Main Division, of the Chrysler Corporation, as a Tool Engineer. Mr. Brunner is a very personable man and we expect great things of him.



C. RAY BRUNNER  
*Secretary*



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# An Editorial

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By A. E. RYLANDER

The following excerpt from the speech of Mr. Ford R. Lamb, our new President, arrests attention: "By its nature this Society cannot concern itself with the individual problems of any member. We can only concern ourselves with the problems pertaining to Tool Engineering."

From its inception, the American Society of Tool Engineers has adhered rigidly to one principle—to advance the collective status of men engaged in this profession through education, discussion and consideration of subjects directly related to the science of Tool Engineering, and incidentally, by formal meetings and informal social gatherings, to bring men engaged in this work into a closer and more harmonious contact.

Now, obviously, money is a major consideration of the Tool Engineer, as of any worker, professional or otherwise. The fattened pay envelope is not only considered the medal of merit, but the medium that keeps the wheels of commerce and industry going 'round and 'round. And, as obviously, there are divers ways of acquiring the fatter envelope; however, the A.S.T.E. chooses the surer if slower way of the progressive engineer—to grow according to results. One is sometimes tempted to consider intelligence and natural ability as liabilities, and to chafe under restraint, but on the whole the entire engineering profession will benefit by strict adherence to ethical standards. Tool Engineering, by that name, is comparatively new, but cold reason dictates that as the Society grows and the Tool Engineer becomes a byword to Management, the individual must inevitably benefit with the organization. That such benefits will vary we know, since any organization scales in individual talent from the average to the extremely brilliant and aggressive. But in the last analysis, the principles of the A.S.T.E. will prevail. So let us devote our energies to designing better tools and production equipment, that we may lighten the labor of all mankind and produce the conveniences that modern civilization demands, at a price that will compel mass buying of mass production. And let us as zealously devote our surplus energies to publicising the necessary place of the Tool Engineer in this scheme of things. When we have accomplished that purpose the rewards will have become reasonably commensurate with the effort.

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## National and Detroit Chapter Officers Introduced at April Meeting

(Continued from page 13.)

Don't underestimate the value of contacts. Attend your meetings. You can't get the value of this thing by sitting home. It is like trying to court your girl through a hedge. You can make her hear all right, but the contact is poor. I want to ask you to remember one thing, and that is that you can expect to get out of your profession and out of your Society only in proportion as you put into it. The profession of Tool Engineering is one of the most, if not the most, important divisions of industry. I hope to see it recognized as such."

## A. S. T. E. CHARTERS NEW CHAPTER IN MILWAUKEE

Recognizing the value of an organization such as the American Society of Tool Engineers, a substantial group of mass manufacturing executives of the Milwaukee area held a preliminary meeting in March to determine whether or not there was sufficient interest in their locality to apply for a charter and establish a branch organization. It so happened that two men, working independently of each other, had conceived of the idea of a branch in Milwaukee—Mr. Daniel E. Eyster of the Seaman Body Corporation, and Mr. George A. Smart of Allis-Chalmers Manufacturing Company. The new chapters committee informed each of these men of the activities under way and with their combined efforts a sufficient number of memberships were obtained and all details arranged for a meeting in which a charter could be applied for. This meeting was held on April 2, at the Eagle's Club in Milwaukee and about one hundred Tool Engineers, representing the major industries of the Milwaukee industrial area, were present.

Present at this meeting were officers of the nearby Racine Chapter of the Society and Mr. A. M. Sargent, past National Secretary of the American Society of Tool Engineers. Mr. Smart, acting as Chairman of the meeting, introduced Mr. Sargent who read a message from Mr. Ford R. Lamb, newly elected National President and also outlined briefly the history, workings, and aims of the Society. The meeting was then opened to discussion and a great many questions were asked with reference to various phases of the Society's activities. When these had been satisfactorily answered, Mr. Sargent was presented with forty-three paid applications, which were considered sufficient to establish the local chapter and present the charter.

Nominations were then opened for a Chapter Chairman and Mr. George A. Smart was unanimously elected to this office. The Chapter Charter was then presented to Mr. Smart who gave a short speech of acceptance and requested that an Assistant Chapter Chairman be elected. As this was without precedent a vote was taken with the result that Mr. Albin T. Witteman was chosen for this office. Mr. D. E. Eyster was elected Milwaukee Chapter Secretary, while Mr. Arthur Johnson was elected Chapter Treasurer.

Each of the newly elected officers were then presented with the various materials and equipment of their offices, as well as an outline of their duties, by Mr. Sargent. This was followed by another question and answer session. Upon adjournment of the meeting, all the officers, including the Racine Chapter Officers, remained for an executive session with Mr. Sargent who went into detail with respect to the various functions and duties, as well as routine matters of the new organization.

The American Society of Tool Engineers congratulates the progressive spirit of this newly formed Milwaukee group and is confident of its success and possibilities to become a strong, vital factor in the National organization.

---

The greater men are, the humbler they are, because they conceive of a greatness beyond attainment.—Gibson.





## ENGINEERED PRODUCTION

EXAMPLES FROM THE SUNDSTRAND FILES

No. 3608

Lathes  
Milling Machines  
Tool Grinders  
Centering Machines  
Balancing Tools

# Model 10 Automatic Stub Lathe Improves Accuracy And Finish On Aluminum Alloy Pistons

Pistons for internal combustion engines are prominent among the large number of different parts that are being machined profitably on Sundstrand Stub Lathes. Profitable machine-operation may depend upon one or more factors such as increasing production, saving floor space or labor, increasing accuracy,

improving finish. A Sundstrand Model 10 Automatic Stub Lathe is making all of these improvements in the production of aluminum alloy pistons for Diesel engines as shown in Fig. 1. These parts are  $6\frac{1}{32}$ " long, have five ring-grooves and four diameters ranging from 4.7442" maximum on the largest to 4.721" minimum on the smallest. Formerly accomplished by grinding and turning on separate machines, all of this work is now finished at one setting on one Model 10 Automatic Stub Lathe as shown in Fig. 2. This saves time, floor space, work handling, insures accurate grooving, reduces capital investment. The easily established automatic operating cycle includes rapid approach, two turning speeds, quick return and stop. Four diamond turn-



Fig. 1 — Aluminum alloy piston diamond-turned to fine finish and high accuracy.

ing-tools, and 10 tungsten carbide tipped grooving tools are used. Finish and accuracy are superior to any previously secured on these parts. We have pleasure in knowing that the purchaser of this machine expressed complete satisfaction with its performance. Confident that Sundstrand Stub Lathes

can render equally satisfactory service on a wide variety of other parts, we will gladly submit reliable cost and production estimates on your turning operations if you will send us drawings and complete data.

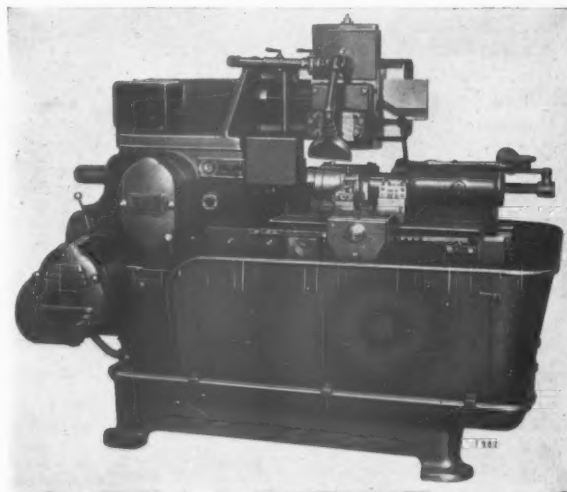


Fig. 2 — Model 10 Sundstrand Stub Lathe with overhead slide and tooling for turning pistons.

can render equally satisfactory service on a wide variety of other parts, we will gladly submit reliable cost and production estimates on your turning operations if you will send us drawings and complete data.

**SUNDSTRAND MACHINE TOOL CO.**  
2530 Eleventh Street, ROCKFORD, ILLINOIS, U. S. A.



## THIS MONTH'S COVER

Illustrated on the cover are the principal factors in a test which was run to demonstrate the superior gripping power of screw machine collets that have diamond-shaped serrations in place of the conventional rectangular serrations.

The collet shown on the cover is a representative example of the Diamond Grip Collets developed by Sutton Tool Company of Detroit, Michigan, in all of which are generated diamond serrations. The test was made on a large size turret lathe of the latest and most improved design, equipped with a Sutton Diamond Grip Collet.

The practical objective of the test was to determine by gradually increasing the speed, feed, and depth of cut whether the grip of the collet under normal chucking tension would slip before the cut became heavy enough to stall the machine. A bar of S.A.E. 3120 steel was used for the work. When the cut was finally worked up to a speed of 220 feet per minute with a feed of .068" and  $7/16$ " depth of cut, the machine stalled. The chips shown on the cover indicate the proportions of the chips being produced when the cut stopped the machine.

That the grip of the collet did not slip is evidenced by the sharp, clean impressions of the diamond serrations left in the remnant of the test bar which is illustrated on the cover. This illustration was made from an untouched photograph. The pattern of the impressions on the bar emphasizes the fact that diamond serrations develop their superior gripping power by attacking rotating and horizontal thrusts at an angle.

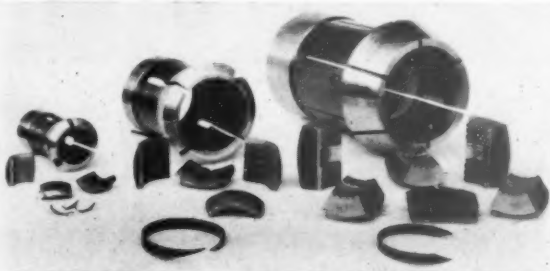
Because of this angular resistance to thrusts, under an extremely heavy cut, diamond serrations are automatically forced into a tighter and deeper grip on the work and hold it positively without any necessity of increasing the chucking tension beyond normal. Under an average cut they grip the work securely without any undue marking of the bar.

Diamond serrations do not penetrate work deeply unless the force of the cut is severe; then they dig in and hold.

Some of the operating advantages that naturally come from the positive gripping action of diamond serrations are reduction of spoilage from slippage, less wear on the collet, and less strain and wear in the chucking mechanism.



Sutton Diamond Grip Collets are furnished in single-piece types, standard master collets with pads, and master-type collets with pads that adjust themselves to the surface inequalities of hot-rolled stock.



The diamond grip design can readily be adapted to special collets of unusual size. The accompanying illustrations show the relative proportions of a standard Diamond Grip Master-Type Collet of average size and two special oversize collets of the same design. In the disassembled view of the collets note the radius on the backs of the diamond-serrated pads. This feature enables the pads to adjust themselves in the master so that they can come to a full and efficient bearing on hot-rolled stock. With this design of collet one master and a collection of interchangeable pads handles the full range of one machine.

### Sundstrand Acquires American Broach and Establishes New Detroit Office

Sundstrand Machine Tool Company, Rockford, Illinois announces the acquisition of the American Broach & Machine Company of Ann Arbor, Michigan and the establishment of a new Detroit office located at 7310 Woodward Avenue.

Messrs. J. E. Livingstone and D. B. Burleigh will represent the Sundstrand Company on both the American Broach line as well as on the Sundstrand lines in the Detroit area, and will make their headquarters in the new offices.

### New Detroit Quarters

B. C. Ames Company of Waltham, Massachusetts, announces the removal of Detroit offices to 312 Curtis Building, Detroit.

The company, manufacturers of Micrometric dial gages, surface gage mounts, precision bench lathes and bench mills, has appointed John M. Graven as their District Representative.

### NEW LITERATURE

**Ohio Gear Company**—A new 128-page catalogue describing the complete line of spur, bevel, worm and other gears, also motorized speed reducers, etc. manufactured by The Ohio Gear Company, 1333 East 179th Street, Cleveland, Ohio, is now available on request. In addition to the above information, it furnishes useful technical data on gearing, standard heat-treatment methods, and other handy facts.

**Pratt and Whitney, Hartford, Conn.**—New circular No. 422 describing the Pratt and Whitney Bench Miller; is profusely illustrated with applications of this machine to various kinds of work.



# RIVETT

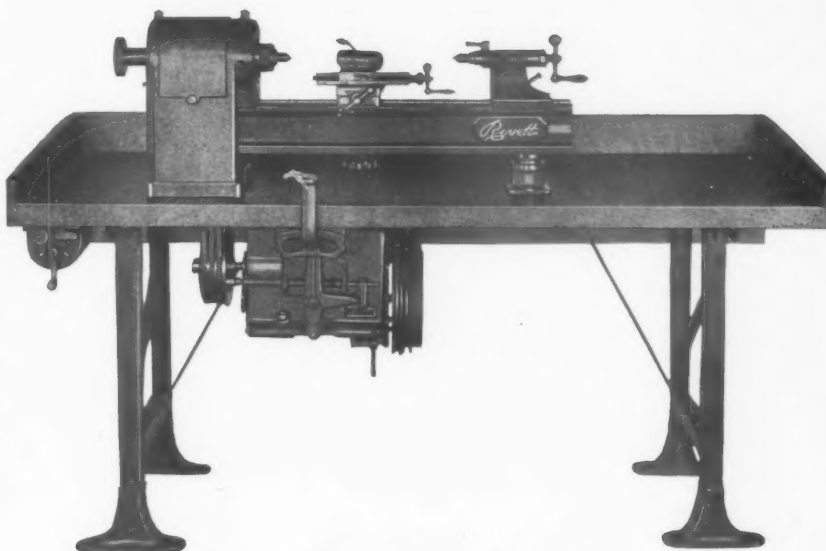
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## Handy Andy's Workshop

### Brief Flashes of the Detroit Meeting

We missed Bert Carpenter, of the sunny smile and engaging personality, and assure him that his regrets reflected the disappointment of his many friends, who missed this hard working but genial past President. Good luck, Bert, in your new job—they're going to like you.

Substituting for Bert Carpenter, Lee proved himself a polished Diamond.

Otto Winters, the new Chairman of the Detroit Chapter, took the steering wheel with a modesty that belies his competence. We predict an interesting year for the boys in Motoria. Let's go!

Mr. (Bill) Fors, Chairman of Reception Committee: "This is no one man job . . . ." You get the idea, fellas?

Mr. (Slim) McClellan, Chairman of Entertainment: "Joe (Siegel) . . . still has his hair . . . I am going to lean on Joe for awhile until I get used to it." Brace yourself, Joe.

Mr. U. S. James, Chairman of Publicity: "There is a saying that a Tool Engineer is a genius on his seat, but an ass on his feet." Well, that's getting to the bottom of things.

Mr. R. M. Lippard, retiring President: "The year just passed has been an important year in the history of our organization . . . grown to a national scope. We have organized this year the chapters in Racine and Cleveland, and just two weeks ago we chartered the Chapter in Milwaukee. We have with us this evening a charter member of that Chapter—Mr. Art Regan. Will Mr. Regan please rise."

Glad to know you, Mr. Regan—and send our best wishes to the boys back home.

Mr. Shuler, 1st. Vice President (National): "I believe that with the help of all the good members . . . that we can help this Society along considerably."

Mr. Luke Beach, 2nd Vice President: "With the aid of all the members we can continue to expand and build to greater achievements."

Mr. Crone, Treasurer (National) "We have no paid officers nor give out free tickets to dinners and entertainments. Each of the officers at this table has paid the full price . . ." Fair enough, and that is one of the reasons why members get so much for so little.

### First A.S.T.E. Student Chapter Installed May 5th

The first Student Chapter of The American Society of Tool Engineers has been organized at the Detroit College of Applied Science in Detroit, Michigan. About fifty student members comprised the initial membership and it is expected that the membership of this group will reach one hundred before the end of the month.

Thomas Sheehan is Chapter Chairman; James Lamb (son of Ford R. Lamb, A.S.T.E. National

## NEW EQUIPMENT

**Cogsdill Spline-Lock Adjustable Reamers**—A new development of the Cogsdill Manufacturing Company, Detroit, Michigan. "An exclusive innovation in blade locking derived from the time tested spline principal." It is claimed for this new tool that it contains a minimum of component parts, is devoid of intricate locking mechanisms, can be expanded on the job, is equally efficient on both roughing and finishing operations. It is also claimed that this tool is capable of sustained runs in the toughest of materials.

Sufficient pressure is exerted through a spline-lock retainer screw when drawn down firmly upon a spline-lock member to depress that member and cause a contraction of the spline pitch diameter. This movement wedges the outer contour of the spline member against adjacent blade surfaces and secures the blades rigidly in the reamer body at the point of load contact. Any tendency of the blades to spring or otherwise move, it is claimed, is eliminated.

**Watervliet Tool Company — Spiral Expansion Self-Aligning Reamer**—A new tool just placed on the market by the Watervliet Tool Company, Albany, New York.

Especially adapted for servicing fractional horse power motors. After shaft bushings have been pressed in, a tapered floating collet, furnished with this reamer, provides the means to perfectly center this tool for reaming the new bushings. After one side is reamed, the action is reversed by placing the floating collet in the reamed bushing and repeating the operation. No "running in" is necessary, it is claimed.

### Is This Man Working In Your Plant?



THOMAS HENRY ROBINSON, JR.

This man is thought to be employed in a manufacturing plant. *The Tool Engineer*, therefore, has been asked to convey the information that he is wanted for kidnapping. If you locate him, or know his whereabouts, call the Federal Department of Investigation, Washington, D. C. Telephone NAtional 7117.

President), Chapter Secretary, and Sylvester Dragar, Chapter Treasurer. Invitations were sent to alumni of the college and other tool engineering students to attend. The initiation ceremonies were held at the Fort Wayne Hotel, May 5th. The principal speaker of the evening was a National Official of the American Society of Tool Engineers.



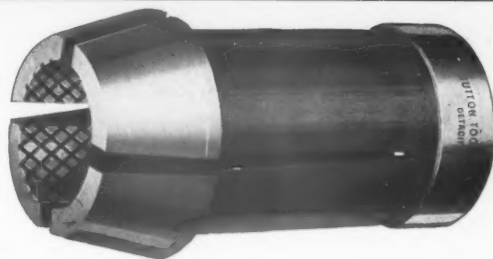
## SUTTON **DIAMOND GRIP** COLLETS

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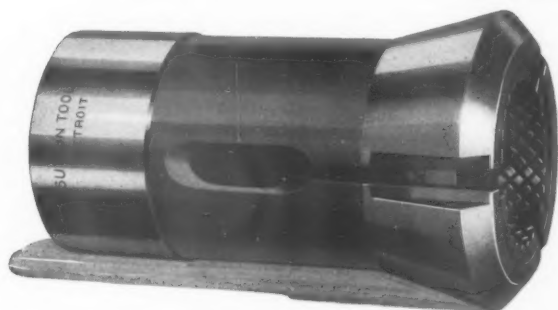
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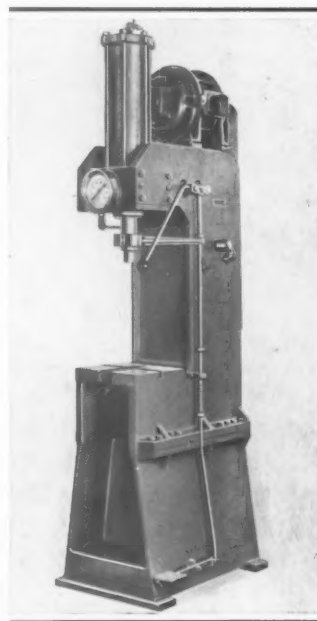
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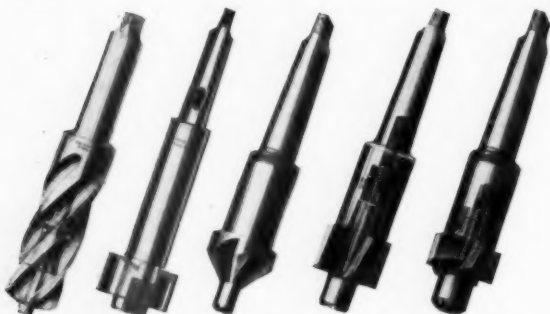
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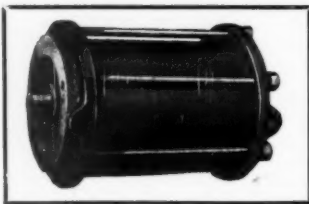
Here is illustrated De-Sta-Co Toggle Clamp used with removable forming die and as a hammer fixture. In addition to its bronze bearings, note the double side plates on which the cold drawn bar of the clamp slides—a design that insures rigidity and extra long life.

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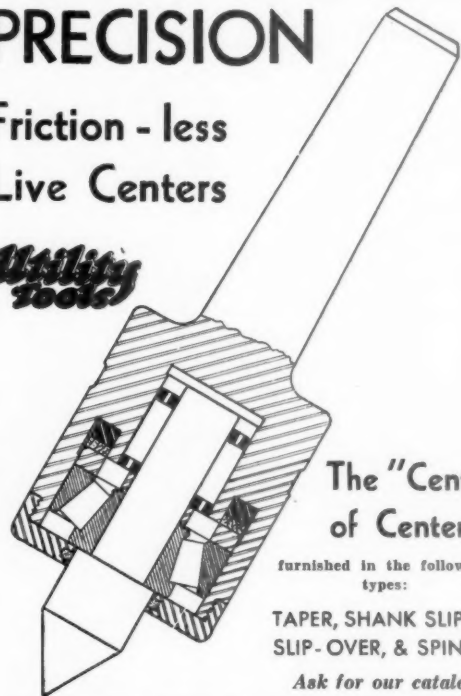
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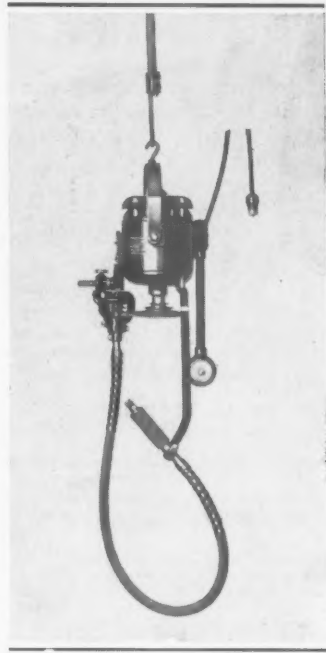
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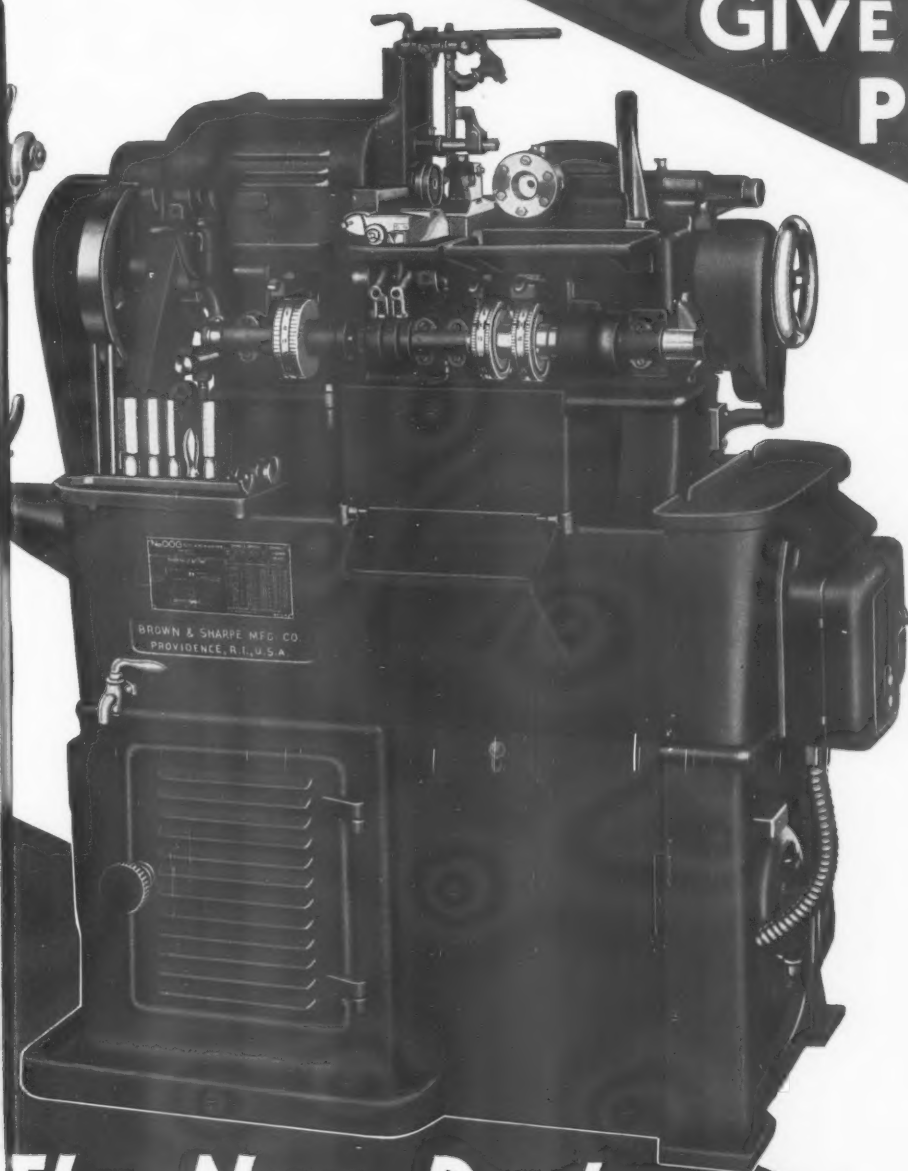
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